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EXAMINER

COUGHLAN, PETER D

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2129

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/716,557

Applicant(s)

SHIMOMURA ET AL.

Examiner

Peter Coughlan

Art Unit

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>A</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. Claims 1-25 are pending in this application.

Information Disclosure Statement

2. Per the form PTO-1449 the applicant states that a translation for the abstract of JP-A-H11-296566 has been provided but the Examiner has no record of this.

35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-25 are rejected under 35 U.S.C. 101 for nonstatutory subject matter. The computer system must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson, 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application. The invention takes natural language input and converts it to 'intermediate knowledge code', which is then converted to 'knowledge code', which is then inputted

into a knowledge based CAD system. There is still a practical application missing from these claims. How do all these steps perform a real world practical function or application. The result has to be a practical application. Please see the interim guidelines for examination of patent applications for patent subject matter eligibility published November 22, 2005 in the official gazette.

In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S.C. § 101. The claims as stated describe input going into a knowledge based CAD system. It is the examiner's position that merely describing input going into a knowledge based CAD system for an unknown purpose using unknown data and not outputting any data to cause a FINAL RESULT (not the steps) to achieve or produce a useful (specific, substantial, AND credible), concrete (substantially repeatable/ non-unpredictable), AND tangible (real world/ non-abstract) result is clearly not statutory.

The invention must be for a practical application and either:

- 1) specify transforming (physical thing) or
- 2) have the FINAL RESULT (not the steps) achieve or produce a useful (specific, substantial, AND credible),

Art Unit: 2129

concrete (substantially repeatable/ non-unpredictable), AND

tangible (real world/ non-abstract) result.

A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended, and if the specification discloses a practical application but the claim is broader than the disclosure such that it does not require the practical application, then the claim must be amended.

Claims that recite input data going into a knowledge based CAD system are not statutory. The claims require a practical application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This claim states that natural language is converted into 'acknowledge code'. The term 'acknowledge code' is only used in claim 1 and is not

Art Unit: 2129

mentioned within the specification. This might be a typographical error and should be 'knowledge code.'

Claims 2, 4, 7, 9, 14, 16, 17, 18, 22, 24, 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. These claims use the term 'CAD' but 'CAD' is never defined within the specification. The Examiner has seen CAD to mean 'computer aided design' as well as 'computer aided diagnosis.' The Examiner does not know if either of these two examples apply to the invention or a third definition is needed.

Claims 1-9, 11, 13, 14, 17-19, 21, 22, 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. All these claims rely on the word 'rules' but there is no description how these rules are to be implemented. There is no system or method on how these rules are to be implemented. Examples of implementation would be neural networks, fuzzy logic, support vector machines, a

Art Unit: 2129

number of clustering algorithms, or just look up tables. The specification is silent on how these rules are to be implemented.

Claims 1-25 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed how to practice the undisclosed practical application. This is how the MPEP puts it:

("The how to use prong of section 112 incorporates as a matter of law the requirement of 35U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention.... If the application fails as a matter of fact to satisfy 35 U.S.C. 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."); In re Kirk, '376 F.2d 936, 942, 153 USPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, otherwise an applicant would anomalously be required to teach how to use a useless invention."). See, MPEP 21107.01 (IV), quoting In re Kirk.

Therefore, claims 1-25 are rejected on this basis.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-25 are rejected under 35 U.S.C. 102(b) (hereinafter referred to as Nomaguchi) being anticipated by Nomaguchi 'Document-based Design Process Knowledge Management for Knowledge Intensive Engineering.'

Claim 1

Nomaguchi anticipates converting a text which is described in a natural language (Nomaguchi, p10:8-13) into acknowledge code (Nomaguchi, p1, abstract; 'Acknowledge code' will be seen as 'knowledge code.' The conversion of text into knowledge code is through the interface of DDMS (intermediate knowledge code) which leads to KIEF (knowledge code); and inputting said knowledge code into said knowledge-based system, said step of converting said text into said knowledge code (Nomaguchi, p2:29 through p3:5; KIEF is a legacy system which requires input to function.) comprising the steps of preparing an intermediate knowledge code which represents knowledge of an object field and does not depend on said knowledge-based system, from the description of said text which is described in a natural language in accordance with intermediate knowledge code generating rules (Nomaguchi, p8:7

Art Unit: 2129

through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.) and converting said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system in accordance with said knowledge code generating rules. (Nomaguchi, p1, abstract; 'Converting intermediate knowledge code into knowledge code' of applicant is illustrated by DDMS working as a front end of KIEF of Nomaguchi.)

Claim 2

Nomaguchi anticipates converting a design document (Nomaguchi, p10:17 through p11:6; 'Design document' of applicant is equivalent to "sketches a drawing model' of Nomaguchi.) into a knowledge code (Nomaguchi, p1, abstract; The conversion of a design into knowledge code is through the interface of DDMS (intermediate knowledge code) which leads to KIEF (knowledge code); and inputting said knowledge code into said knowledge-based CAD, said step of converting said design document into said knowledge code (Nomaguchi, p2:29 through p3:5; KIEF is a legacy system which requires input to function.) comprising the steps of preparing an intermediate knowledge code which represents knowledge of a design object field and does not depend upon said knowledge-based CAD, from the description of said design document which is described in a natural language in accordance with intermediate knowledge code generating rules (Nomaguchi, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.) and converting said intermediate knowledge code into

Art Unit: 2129

said knowledge code in accordance with said knowledge code generating rules.

(**Nomaguchi**, p1, abstract; 'Converting intermediate knowledge code into knowledge code' of applicant is illustrated by DDMS working as a front end of KIEF of Nomaguchi.)

Claim 3

Nomaguchi anticipates wherein said step of preparing said intermediate knowledge code comprises the steps of conducting a morphological analysis or syntactic analysis for the description of the design document which is described in a natural language and preparing said intermediate knowledge code which matches morphological information and syntactic information in accordance with said intermediate knowledge code generating rules based upon the morphological information or syntactic information which is obtained by said morphological analysis or said syntactic analysis. (**Nomaguchi**, p7:6 through p8:6; 'Conducting a morphological analysis or syntactic analysis' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. Examples of 'natural language' are "stepping motor" and "motor" of Nomaguchi. 'Matches morphological information and syntactic information' of applicant is disclosed by 'ranking' of the documents of Nomaguchi.)

Claim 4

Nomaguchi anticipates wherein at the step of converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules, said knowledge code is a CAD codes used for said knowledge-based

Art Unit: 2129

CAD, and in order to convert said intermediate presentation code into said CAD code used for a plurality of different knowledge-based CADs, said intermediate knowledge code is converted into a plurality of different CAD codes in accordance with a plurality of different knowledge-based code generating rules. (**Nomaguchi**, p1, abstract, p9 Figure 4; 'Intermediate knowledge code' is equivalent to DDMS. DDMS is an interface to KIEF which is a CAD legacy system. Examples of 'different knowledge-based code' of applicant is equivalent to '3D Solid Modeler, Parts selector, 2D Modeler, FBS Modeler, Formulae Modeler, QP Reasoner' of Nomaguchi.)

Claim 5

Nomaguchi anticipates wherein after the step of converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules, said knowledge code is reconverted into said intermediate knowledge code by using a knowledge code compiler and further said intermediate knowledge code is converted into different knowledge codes by using different knowledge code generating rules. (**Nomaguchi**, p1, abstract, p9 Figure 4; 'Intermediate knowledge code' is equivalent to DDMS. DDMS is an interface to KIEF which is a CAD legacy system. If DDMS is the interface or 'front end' of KIEF then information into KIEF and information out of KIEF must pass through DDMS. Therefore there exists within DDMS a 'compiler(s)' or 'unit(s)' which provide the converting into and out of KIEF. Examples of 'different knowledge-based code' of applicant is equivalent to '3D Solid Modeler, Parts selector, 2D Modeler, FBS Modeler, Formulae Modeler, QP Reasoner' of Nomaguchi.)

Claim 6

Nomaguchi anticipates a system for generating a knowledge code used for a knowledge-based system, comprising a knowledge code generator for converting a text which is described in a natural language (**Nomaguchi**, p10:8-13) into a knowledge code (**Nomaguchi**, p1, abstract; The conversion of input into knowledge code is through the interface of DDMS (intermediate knowledge code) which leads to KIEF (knowledge code) and a knowledge code input means for inputting said knowledge code to said knowledge-based system, said knowledge code generator(**Nomaguchi**, p2:29 through p3:5; KIEF is a legacy system which requires input to function.) including an intermediate knowledge code generating unit for generating an intermediate knowledge code which represents the knowledge of an object field and does not depend on said knowledge-based system, from the description of the text which is described in a natural language in accordance with intermediate knowledge code generating rules (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.) and a knowledge code converting unit for converting said intermediate knowledge code into a knowledge code which can be used in said knowledge-based system in accordance with knowledge code generating rules. (**Nomaguchi**, p1, abstract; 'Converting intermediate knowledge code into knowledge code' of applicant is illustrated by DDMS working as a front end of KIEF of Nomaguchi.)

Claim 7

Nomaguchi anticipates a knowledge code generating system for generating a knowledge code used for a knowledge based CAD as claimed in claim 6, wherein said knowledge code generator comprises an intermediate knowledge code generating unit for generating an intermediate knowledge code which represents the knowledge of design object field and does not depend on said knowledge-based CAD, from the description of the design document which is described in a natural language in accordance with said intermediate knowledge code generating rules and a knowledge code converting unit for converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules of said knowledge-based CAD. (**Nomaguchi**, p1, abstract, p10:8-13, p10:17 through p11:6; 'Intermediate knowledge code' is equivalent to DDMS. DDMS is an interface to KIEF which is a CAD legacy system. 'Design document' of applicant is equivalent to "sketches a drawing model" of Nomaguchi.)

Claim 8

Nomaguchi anticipates a knowledge code generating system as claimed in claim 7, wherein said intermediate knowledge code generating unit conducts a morphological analysis or syntactic analysis for the description of said design document which is described in a natural language and generates an intermediate knowledge code which matches morphologic information or syntactic information in accordance with said intermediate knowledge code generating rules based upon the morphological

Art Unit: 2129

information or syntactic information which is obtained by said morphological analysis or said syntactic analysis. (Nomaguchi, p7:6 through p8:6; 'Conducting a morphological analysis or syntactic analysis' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. Examples of 'natural language' are "stepping motor" and "motor" of Nomaguchi. 'Matches morphological information and syntactic information' of applicant is disclosed by 'ranking' of the documents of Nomaguchi.)

Claim 9

Nomaguchi anticipates a knowledge code generating system as claimed in claim 8, wherein for converting said intermediate knowledge code into a plurality of different CAD codes in accordance with a plurality of different knowledge code generating rules in said knowledge code converting unit, said intermediate knowledge code is converted into said CAD code used for a plurality of different knowledge-based CADs.

(Nomaguchi, p9 Figure 4, abstract; 'Intermediate knowledge code' is equivalent to DDMS. DDMS is an interface to KIEF which is a CAD legacy system. If DDMS is the interface or 'front end' of KIEF then information into KIEF and information out of KIEF must pass through DDMS. Therefore there exists within DDMS a 'compiler(s)' or 'unit(s)' which provide the converting into and out of KIEF. Examples of 'different knowledge-based code' of applicant is equivalent to '3D Solid Modeler, Parts selector, 2D Modeler, FBS Modeler, Formulae Modeler, QP Reasoner' of Nomaguchi.)

Claim 10

Nomaguchi anticipates a knowledge code generating system as claimed in claim 9, wherein said knowledge code generator reconverts said knowledge code into said intermediate knowledge code by using a knowledge code compiler after conversion of said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rule and converts said intermediate knowledge code into different knowledge code in accordance with said knowledge code generating rule. (Nomaguchi, p9 Figure 4, abstract; Examples of 'different knowledge-based code' of applicant is equivalent to '3D Solid Modeler, Parts selector, 2D Modeler, FBS Modeler, Formulae Modeler, QP Reasoner' of Nomaguchi. 'Intermediate knowledge code' is equivalent to DDMS. DDMS is an interface to KIEF which is a CAD legacy system. If DDMS is the interface or 'front end' of KIEF then information into KIEF and information out of KIEF must pass through DDMS. Therefore there exists within DDMS a 'compiler(s)' or 'unit(s)' which provide the converting into and out of KIEF.)

Claim 11

Nomaguchi anticipates preparing a text which is described in a natural language by means of a text description assistant system (Nomaguchi, p10:8-13; 'Description assistant system' of applicant is equivalent to 'prompt the designer' of Nomaguchi.); converting said text into an intermediate knowledge code (Nomaguchi, p8:7 through p9:6; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi. DDMS is the interface between the user and KIEF. The conversion of text is handled by HTML text editor.); converting said

Art Unit: 2129

intermediate knowledge code into a knowledge code (**Nomaguchi**, p1, abstract; The conversion of input into knowledge code is through the interface of DDMS (intermediate knowledge code) which leads to KIEF (knowledge code); and inputting said knowledge code into said knowledge-based system (**Nomaguchi**, p2:29 through p3:5; KIEF is a legacy system which requires input to function.), and in that said text describing assistant system is adapted to prepare said text by inputting describing items in accordance with a preliminarily provided text description procedure, said steps of converting said text into said intermediate knowledge code converts the description of a formal text into said intermediate knowledge code which corresponds to said formal text and does not depend upon said knowledge-based system, said step of converting said intermediate knowledge code into said knowledge code converts said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system in accordance with knowledge code generating rules. (**Nomaguchi**, p10:8-13, abstract; By prompting the user input is fed into the intermediate knowledge code system (DDMS) therefore a conversion takes place (due to the fact DDMS is an interface. In turn, the DDMS converts the intermediate knowledge code into knowledge code due to the fact that DDMS works on the front end of KIEF. Therefore DDMS does not depend on the knowledge code system.)

Claim 12

Nomaguchi anticipates a process for converting a knowledge code used in a knowledge-based system into a text which is described in a natural language,

Art Unit: 2129

characterized in that said knowledge code is output from said knowledge-based system, said output knowledge code being converted into said intermediate knowledge code which does not depend upon said knowledge-based system by using an intermediate knowledge code converting unit (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.) and said intermediate knowledge code being converted into said text corresponding to said intermediate knowledge code by using a document description generating unit. (**Nomaguchi**, p2:19-28; The conversion of knowledge code into text is equivalent to 'the generation of design documents during design. While designing, knowledge code is being employed. Nomaguchi's system automatically generates documents as the design progresses.)

Claim 13

Nomaguchi anticipates a process for producing a knowledge code as claimed in claim 11, wherein at the steps of preparing a text which describes the knowledge of an object field in a natural language by using said text description assistant system and converting said text into said intermediate knowledge code, said process further includes the step of preparing an intermediate knowledge code which does not depend upon said knowledge base system, from the description of the text which is described in a natural language and is prepared without using said text description assistant system in accordance with intermediate knowledge code generating rules. (**Nomaguchi**, p10:8-13, abstract, p2:19-28; 'Description assistant system' of applicant is equivalent to

'prompt the designer' of Nomaguchi. At this point the system is using DDMS which is an interface or used as a front end to KIEF, a CAD system. Since DDMS is on the front end of KIEF, conversion from intermediate knowledge code into knowledge cage takes place. Also since DDMS is the interface for the user, conversion of text into intermediate knowledge code takes place. The preparation of text without using the 'assistant system' is performed by 'generate design documents during design' of Nomaguchi.)

Claim 14.

Nomaguchi anticipates preparing a design procedure document which is described in a natural language (**Nomaguchi**, p10:8-13) by a design procedure document description assistance system (**Nomaguchi**, p10:8-13; 'Description assistant system' of applicant is equivalent to 'prompt the designer' of Nomaguchi.); converting said design procedure document into an intermediate knowledge code(**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.), converting said intermediating code into a CAD knowledge code and inputting said CAD knowledge code into said knowledge-based CAD, (**Nomaguchi**, p1, abstract; DDMS is used as a front end to KIEF, therefore the intermediate knowledge code of DDMS is used in relation to the CAD system of KIEF.)said design procedure document description assistance system being adapted to describe said design procedure document by selecting and inputting description items of said design procedure document in

Art Unit: 2129

accordance with preliminarily provided description rules (**Nomaguchi**, p7:6 through p8:6; 'selecting and inputting description items' of applicant is equivalent to 'retrieve documents similar' of **Nomaguchi**.), said step of converting said design procedure document into said representation code converting the description of said design procedure document into said intermediate knowledge code which corresponds to the description of said design procedure document and does not depend upon said knowledge-based CAD (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS)' of **Nomaguchi**. DDMS is an interface to KEIF and therefore does not depend on the knowledge based CAD.), said step of converting said intermediate knowledge code into said knowledge code converting said intermediate knowledge code into said CAD knowledge code which can be used in said knowledge-based CAD in accordance with knowledge code generating rules. (**Nomaguchi**, p1, abstract; Since DDMS is used on the front end of KIEF, this illustrates the converting of intermediate knowledge code into knowledge code. KIEF is a CAD system.).

Claim 15

Nomaguchi anticipates a process for generating a knowledge code as claimed in claim 14, wherein said design procedure document description assistance system selects formal texts which constitute preliminarily provided design procedure document, a number of formal texts are preliminarily classified and prepared so that the design procedure document can be prepared by sequentially selecting the description

Art Unit: 2129

procedure of said formal texts and each formal text of said design procedure document corresponds to the intermediate knowledge code. (**Nomaguchi**, p7:6 through p8:6, Figure 4; 'selects formal texts' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. 'Prepared sequentially' of applicant is equivalent to 'ranked' of Nomaguchi. All this takes place in DDMS which is equivalent to 'intermediate knowledge code.'))

Claim 16

Nomaguchi anticipates a process for converting a CAD knowledge code used in a CAD knowledge-based system into a design procedure document which is described in a natural language, characterized in that said CAD knowledge code is output from said knowledge-based CAD system, said output CAD knowledge code being converted into said intermediate knowledge code which does not depend upon said knowledge-based system by using an intermediate knowledge code converting unit (**Nomaguchi**, p8:7 through p9:2, p12:1-19, p9 Figure 4; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi. 'Converting unit' of applicant is equivalent to 'document converter' of Nomaguchi.) and said intermediate knowledge code being converted into said design procedure document comprising formal texts corresponding to said intermediate knowledge code by using a document description generating unit. (**Nomaguchi**, p2:19-28, abstract; Nomaguchi discloses the generation of documents as the design process takes place. The CAD system (KIEF) is linked to DDMS which is on the front end of KIEF. Therefore

formal texts of the documents that are generated must first be in knowledge code then is converted into intermediate knowledge code which is then in a natural language due to the fact DDMS is the interface for the user.)

Claim 17

Nomaguchi anticipates a process for generating a knowledge code as claimed in claim 14, wherein at the steps of preparing the design procedure document which describes the knowledge of an object field in a natural language by using the design procedure document description assistance system, and converting said design procedure document into said intermediate knowledge code, said process further comprises the step of conducting a morphological analysis or syntactic analysis of the description of said design procedure document which is prepared without using said design procedure document description assistance system and is described in a natural language and preparing said intermediate knowledge code which does not depend on said knowledge-based CAD in accordance with said intermediate knowledge code generating rules based upon morphological information or syntactic information which is obtained by said morphological analysis or syntactic analysis. (Nomaguchi, p7:6 through p8:6, Figure 1, p2:19-28; 'Conducting a morphological analysis or syntactic analysis' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. Examples of 'natural language' are "stepping motor" and "motor" of Nomaguchi. 'Matches morphological information and syntactic information' of applicant is disclosed by 'ranking' of the documents of Nomaguchi. 'Object field' of applicant is a portion of

Art Unit: 2129

'model library' of Nomaguchi. 'Natural language' is the input of the user on the interface of DDMS. This is converted into intermediate knowledge code which is then converted into knowledge code of KIEF a CAD system. KIEF has its own set of rules in the form of metamodel mechanism. Document which is prepared without the document description assistance is performed by generating design documents during design.)

Claim 18

Nomaguchi anticipates a process for generating CAD knowledge codes as claimed in claim 17, wherein in order to convert said intermediate knowledge code into said CAD knowledge codes used for a plurality of different said knowledge-based CADs, said intermediate knowledge code is converted into the plurality of different said CAD knowledge codes in accordance with a plurality of different knowledge code generating rules. (**Nomaguchi**, p9 Figure 4; Examples of 'different knowledge-based code' of applicant is equivalent to '3D Solid Modeler, Parts selector, 2D Modeler, FBS Modeler, Formulae Modeler, QP Reasoner' of Nomaguchi. 'Different knowledge code generating rules' of applicant would be equivalent to 'context modeler' of DDMS of Nomaguchi.)

Claim 19

Nomaguchi anticipates a knowledge code generating system for generating a knowledge codes used in a knowledge-based system (**Nomaguchi**, p9, Figure 4; 'Knowledge code generating system' of applicant is equivalent to 'FBS Modeler' of

Art Unit: 2129

Nomaguchi.), characterized in that said knowledge code generating system comprises a text generating unit for preparing a text which is described in a natural language by means of a text description assistance system(**Nomaguchi**, p9, Figure 4; The output of the 'pluggable metamodel system' goes into the document converter which is an interface between text' and knowledge code.), an intermediate knowledge code generating unit for converting said text into an intermediate knowledge code(**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.), a knowledge code converting unit for converting said intermediate code into a knowledge code (**Nomaguchi**, p9, Figure 4; 'Knowledge code converting unit' of applicant is equivalent to 'document converter' of Nomaguchi.) and a knowledge code input unit for inputting said knowledge code into said knowledge-based system (**Nomaguchi**, p9, Figure 4; 'Knowledge code input unit' of applicant is equivalent to 'pluggable metamodel system' of Nomaguchi.), said text generating unit is adapted to describe said text by using a text preparing tool which prepares a text using formal texts by inputting description items in accordance with preliminarily provided text description procedure (**Nomaguchi**, p9, Figure 4; 'Prepares a text using formal texts' of applicant is accomplished by 'document template' of Nomaguchi.), said intermediate code converting unit is adapted to convert the description of said formal text of said text into said intermediate knowledge code which corresponds to said formal text and does not depend on said knowledge-based system(**Nomaguchi**, p9, Figure 4;'Intermediate code converting unit' of applicant is equivalent to 'HTML document editor' of Nomaguchi.),

Art Unit: 2129

and said knowledge code converting unit is adapted to convert said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system by using a knowledge code generating rules. (**Nomaguchi**, p9, Figure 4; Figure 4 illustrates the output of the 'document converter' goes into the knowledge code or KIEF of Nomaguchi.)

Claim 20

Nomaguchi anticipates a knowledge code converting system for converting a knowledge code used in a knowledge-based system into a text which is described in a natural language, characterized(**Nomaguchi**, p9, Figure 4; This occurs from the 'document converter' into the 'HTML document editor' of Nomaguchi.) in that said knowledge code converting system comprises a knowledge code output unit for outputting said knowledge code from said knowledge-based system, an intermediate knowledge code converting unit for converting said output knowledge code into an intermediate knowledge code which does not depend on said knowledge-based system (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi. The conversion between 'knowledge code' and 'intermediate knowledge code' occurs within the 'document converter.') and a document description generating unit for converting said intermediate knowledge code into a text including said intermediate knowledge code and corresponding formal texts, which is described in a natural language.

Art Unit: 2129

(**Nomaguchi**, p9, Figure 4; 'Document description generating unit' would be equivalent to 'HTML document editor' of **Nomaguchi**.)

Claim 21

Nomaguchi anticipates a knowledge code generating system for generating a knowledge code used in said knowledge-based system as claimed in claim 18, further comprising a unit for preparing an intermediate knowledge code which represents the knowledge of an object field (**Nomaguchi**, p7:6 through p8:6, Figure 1, p2:19-28; 'Object field' of applicant is a portion of 'model library' of **Nomaguchi**. Since 'model library' is within KIEF, then it is within 'knowledge code.' The 'unit for preparing an intermediate knowledge code' would reside within 'document base' of **Nomaguchi**.) and does not depend upon said knowledge-based system from the description of a text which is prepared without using said text description assistance system and is described in a natural language in accordance with an intermediate knowledge code generating rules in addition to said text generating unit for preparing the text which is described in a natural language by the text description assistance system and said intermediate knowledge code generating unit for converting said text into said intermediate knowledge code. (**Nomaguchi**, Figure 4; Since the 'document base' is in DDMS then it is not affiliated with KIEF or 'knowledge code'.)

Claim 22

Nomaguchi anticipates a knowledge generating system which is used in a knowledge-based CAD(**Nomaguchi**, Figure 4; 'CAD' of applicant is equivalent to 'KIEF' of Nomaguchi.), comprising a design procedure document generating unit for preparing a design procedure document which is described in a natural language by a design procedure document description assistance system(**Nomaguchi**, p10:8-13; 'Description assistant system' of applicant is equivalent to 'prompt the designer' of Nomaguchi.), and an intermediate knowledge code generating unit for converting said design procedure document into an intermediate knowledge code (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi.), a CAD code converting unit for converting said intermediate knowledge code into a CAD knowledge code and a knowledge code input unit for inputting said CAD knowledge code into said knowledge-based CAD (**Nomaguchi**, Figure 4; 'CAD code converting unit' of applicant is equivalent to 'document converter' of Nomaguchi.), said design procedure document generating unit is adapted to describe said design procedure document by using a design procedure document preparing tool for preparing a design procedure document by inputting design items in accordance with preliminarily provided description rules of the design procedure document (**Nomaguchi**, p10:17 through p11:6; 'Design document' of applicant is equivalent to "sketches a drawing model' of Nomaguchi.), said intermediate knowledge code generating unit is adapted to convert the description of said design procedure document into said intermediate knowledge code (**Nomaguchi**, abstract, Figure 4; Converting the 'description design' into 'intermediate knowledge code' is

Art Unit: 2129

accomplished by the 'HTML document editor' of Nomaguchi.) which corresponds to the description of said design procedure document and does not depend on said knowledge-based CAD (Both the 'HTML Document editor' and the 'document converter' are within the DDMS and therefore do not depend on the 'knowledge-based CAD.'), and said CAD code converting unit is adapted to convert said intermediate knowledge code into said knowledge code which can be used in said knowledge-based CAD by using a knowledge code generating rules. (Nomaguchi, Figure 4; 'Converting unit' of applicant is equivalent to 'document converter' of Nomaguchi.)

Claim 23

Nomaguchi anticipates a knowledge code generating system for generating a knowledge code as claimed in claim 22, wherein said design procedure document generating unit selects formal texts which constitute preliminarily provided design procedure document, and a number of said formal texts are preliminarily classified and prepared so that the design procedure document can be prepared by sequentially selecting the description procedure of said formal texts and each description item of said design procedure document corresponds to the intermediate knowledge code. (Nomaguchi, p7:6 through p8:6, Figure 4; 'selects formal texts' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. 'Prepared by sequentially selecting' of applicant is equivalent to 'ranked' of Nomaguchi. All this takes place in DDMS which is equivalent to 'intermediate knowledge code'.)

Claim 24

Nomaguchi anticipates an intermediate knowledge code converting unit for outputting said knowledge CAD code from said knowledge-based CAD to convert said CAD knowledge code (**Nomaguchi**, figure 4; The 'document converter' converts intermediate knowledge code into knowledge code and also knowledge code into intermediate knowledge code.) into said intermediate knowledge code which does not depend on said knowledge-based CAD (**Nomaguchi**, p8:7 through p9:2; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi. DDMS is an interface between the user and KIEF), and a document description generating unit for converting said intermediate knowledge code into said design procedure document including said intermediate knowledge code and corresponding formal text. (**Nomaguchi**, p10:1-16; 'Document description generating unit' of applicant is disclosed by 'documents are produced by DDMS are coded in HTML' of Nimaguchi.)

Claim 25

Nomaguchi anticipates a system for generating a knowledge code as claimed in claim 22, wherein in addition to the design procedure document preparing unit for preparing the design procedure document which is described in a natural language (**Nomaguchi**, Figure 4; 'Natural language' is entered into the 'HTML document editor' which it is transformed into 'intermediate knowledge code' before it enters the 'document converter.' After the 'document converter' it is converted into 'knowledge code.') and

Art Unit: 2129

the intermediate knowledge code generating unit for converting said design procedure document into said intermediate knowledge code (**Nomaguchi**, p8:7 through p9:2, p12:1-19, p9 Figure 4; 'Intermediate knowledge code' of applicant is equivalent to 'Design Documentation Management System (DDMS) of Nomaguchi. 'Converting unit' of applicant is equivalent to 'document converter' of Nomaguchi.), said system further comprises a unit for conducting a morphological analysis or syntactic analysis of the description of said design procedure document which is prepared without using said design procedure document description assistance system and is described in a natural language and for preparing said intermediate knowledge code which does not depend on said knowledge-based CAD in accordance with said intermediate knowledge code generating rules based upon morphological information or syntactic information which is obtained by said morphological analysis or syntactic analysis. (**Nomaguchi**, p7:6 through p8:6; 'Conducting a morphological analysis or syntactic analysis' of applicant is equivalent to 'retrieve documents similar' of Nomaguchi. Examples of 'natural language' are "stepping motor" and "motor" of Nomaguchi. 'Matches morphological information and syntactic information' of applicant is disclosed by 'ranking' of the documents of Nomaguchi.)

Conclusion

4. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure.

- A Hypertext-based Design Documentation System for the Knowledge Intensive Engineering Framework: Nomaguchi

- Document-based Design Process Knowledge Management for Knowledge Intensive Engineering: Nomaguchi

- Design Knowledge Management based on the Model of Synthesis: Nomaguchi

- Knowledge Acquisition by Documenting Design for the Knowledge Intensive Engineering Framework: Nomaguchi

5. Claims 1-25 are rejected.

Correspondence Information

6. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3080. Any response to this office action should be mailed to:

Art Unit: 2129

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